DWIRTS

DWI RECIDIVISM IN TEXAS: 1987 through 1990

Texas Commission on
Alcohol and Drug Abuse

BRINGING TEXAS A NEW VIEW OF HUMAN POTENTIAL.

DWI RECIDIVISM IN TEXAS, 1987–1990

Released
January 1993

Texas Commission on Alcohol and Drug Abuse

DWI RECIDIVISM IN TEXAS, 1987-1990

Liang Y. Liu, Ph.D.

ACKNOWLEDGEMENTS

This study could not have been completed without the contributions of a number of people. Special recognition should go to Eric Fredlund, Ph.D., Lead Research Associate at TCADA, who designed and created the initial Texas DWI recidivism project, contributed parts of Chapter 2, and provided many valuable suggestions and guidance throughout. Robby Duffield, Director of Offender Education Services at TCADA, prepared parts of Chapter 2 and made many helpful comments on the draft. Jennifer Kavinsky, M.A., Research Editor at TCADA designed and edited and coordinated the production of the final report. Finally, Elaine Keith at Applications Programming, Texas Department of Public Safety, gave much assistance in provided the necessary data for the DWI Recidivism Tracking System (DWIRTS). The DWIRTS system was originally developed by TCADA under a contract from the Texas Department of Transportation.

Texas Commission on Alcohol and Drug Abuse
9001 North IH-35, Suite 105
Austin, Texas 78753-5233
(512) 349-6600, (800) 832-9623
Web site: www.tcada.state.tx.us

♻ This document was printed on recycled paper.

DWI RECIDIVISM IN TEXAS, 1987-1990

I. DWI RECIDIVISM IN TEXAS, 1987–1990

1.1 INTRODUCTION

Drunk driving continues to be one of the state's most serious public health and safety problems. In 1991 in Texas, about 41 percent of fatalities and 13 percent of non-fatal injuries in motor vehicle accidents involved alcohol, and alcohol-related traffic crashes killed 1,248 people and injured an additional 33,786 (TCADA 1992). Alcohol-related motor vehicle accidents in 1989 resulted in an estimated 50,000 potential years of life lost due to premature mortality (Liu 1992).

About 1 out of 100 Texas licensed drivers is arrested for DWI (Driving While Intoxicated) in a given year, if one ignores the duplication of repeat offenders; but these repeat offenders, or recidivists, contribute significantly to the overall DWI problem and must be specifically addressed when discussing DWI prevention. Repeat DWI offenders have increasingly contributed to the workload of the DWI countermeasure system. Repeat DWI offenders ensure a never-ending supply of arrestees, overcrowd county court dockets, and fill county jails. Fewer repeat offenders would mean that efforts could be redirected to discouraging DWI in the general population, and ultimately to reducing accident rates.

The purpose of this study, which is second in a series, is to measure the DWI recidivism rates and to reveal what circumstances and factors affect DWI rearrest. Survival analysis is employed to compare the recidivism patterns among different groups. Various attributes that are associated with DWI recidivism are studied as well, such as DWI Education program attendance and completion, blood/breath test refusals, age, gender, prior non-DWI moving violations, license suspension, and regional differences. The analysis is based on examination of driver history note records of about 400,000 Texans arrested for DWI between 1987 and 1990. The data from Texas Department of Public Safety were processed by the DWI Recidivism Tracking System (DWIRTS), an automated driving record interpretation system. The DWIRTS combines information from Texas driver history records as well as other sources, such as automobile accident data, to create a plentifully detailed database supporting in-depth exploration of DWI behavior in Texas. The study's outcomes can be expected to impact policy decisions regarding drinking drivers and DWI recidivism prevention.

The last year used for the research period in the current study was 1990. This end-date provides a sufficient length of time for follow-up analysis and for the dataset to become mature and complete. In other words, the chosen end-date allows for most of the relevant data pertaining to a DWI event to occur and be recorded. For a person to be arrested for DWI, sentenced, assigned to a DWI class, and to complete the class takes time, and for all that data to be input into and read by a data system takes even longer. Using a four-year followup period produces a sufficiently robust dataset to fully analyze recidivism behavior over time.

In 1991, TCADA published the results of its analysis of DWI recidivism based on driving records for the years 1985 to 1988. Based on the study, the Legislature in 1991 (in House Bill 1, the General Appropriations Act) adopted as one of TCADA's key performance targets the measure "percent of DWI offenders completing DWI Education who were rearrested for DWI." For 1985–1988, the number was 5 percent. The current study found that for the years 1987–1990, the recidivism rate remained at 5 percent.

1.2 DWI Recidivism 1987-1990: Summary

General Results

- DWI arrests declined by 21 percent between 1985 and 1989, and then increased slightly in 1990; this overall trend corresponds closely to the trend in per capita alcohol consumption during the same period.
- DWI arrests of *first offenders* declined by about 10 percent between 1987 and 1989 (from 60,138 to 54,376) and then increased to 56,445 in 1990.
- DWI arrests of *repeat offenders* increased by about 15 percent between 1987 and 1990 (from 29,768 to 34,219), which suggests that a stable minority of Texans persisted in drinking and driving.
- The percent of DWI offenders who were recidivists increased from 33 percent in 1987 to 38 percent in 1990.
- The more times an individual has been arrested for DWI, the more likely it is he or she will be arrested again for DWI (Figure 1).
- DWI offenders are most likely to be rearrested within one year of their first DWI; risk of rearrest decreases rapidly in the second year, and more slowly in the third and fourth years following arrest. Thus, efforts to prevent future drinking and driving should begin as soon as possible after initial arrest, and continue through the second year following the offense.

DWI Education on Recidivism

- DWI offenders who receive probation and complete the required DWI Education class are less likely to recidivate than those who are directly convicted: 5 percent of first offenders who complete the DWI Education class recidivate within one year of their initial arrest, compared to 11 percent of first offenders who receive direct conviction (Figure 2).
- Probated first offenders who do not complete the DWI Education class are more than twice as likely to recidivate than probated offenders who complete the class (13 percent versus 5 percent).
- The DWI Education class is less effective in preventing recidivism among multiple offenders than among first offenders: only 5 percent of first offenders who complete DWI Education class recidivate within one year compared to 9 percent of multiple offenders. Specialized DWI Intervention classes targeted to the multiple offender were first implemented in fiscal year 1990, so the data in this 1987–1990 report can not reflect the effect of this intervention initiative.
- The percent of DWI offenders who received probation/DWI education decreased slightly between 1987 and 1990.

FIG.1 CUMULATIVE DWI RECIDIVISM RATE AT YEARS 1 AND 4 BY NUMBER OF PRIOR CONVICTIONS: TEXAS, 1987–1990

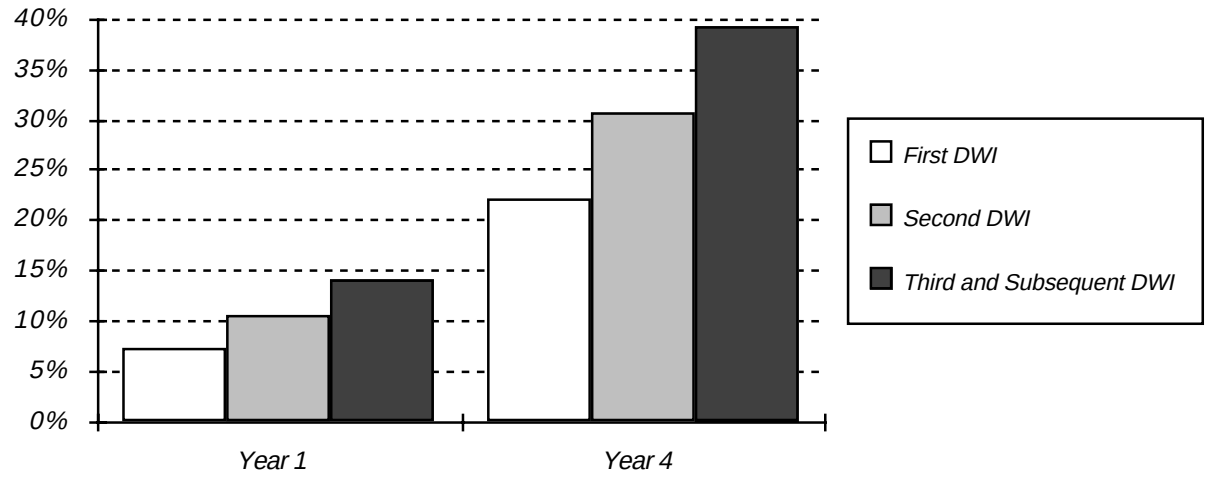
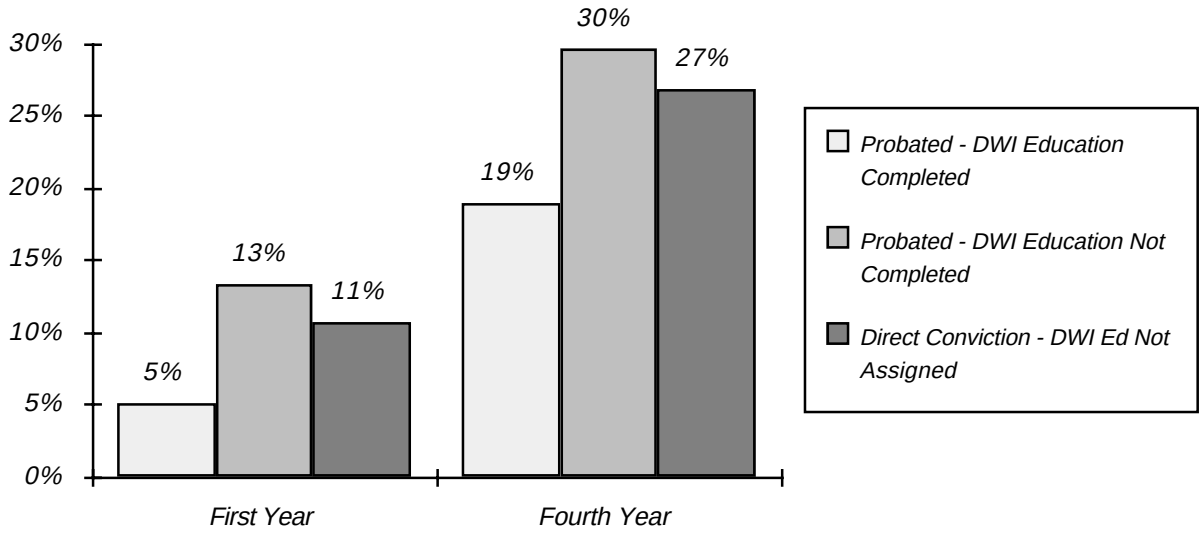


FIG.2 CUMULATIVE DWI RECIDIVISM MEASURED AT ONE AND FOUR YEARS AFTER INITIAL ARREST: TEXAS FIRST OFFENDERS, 1987-1990



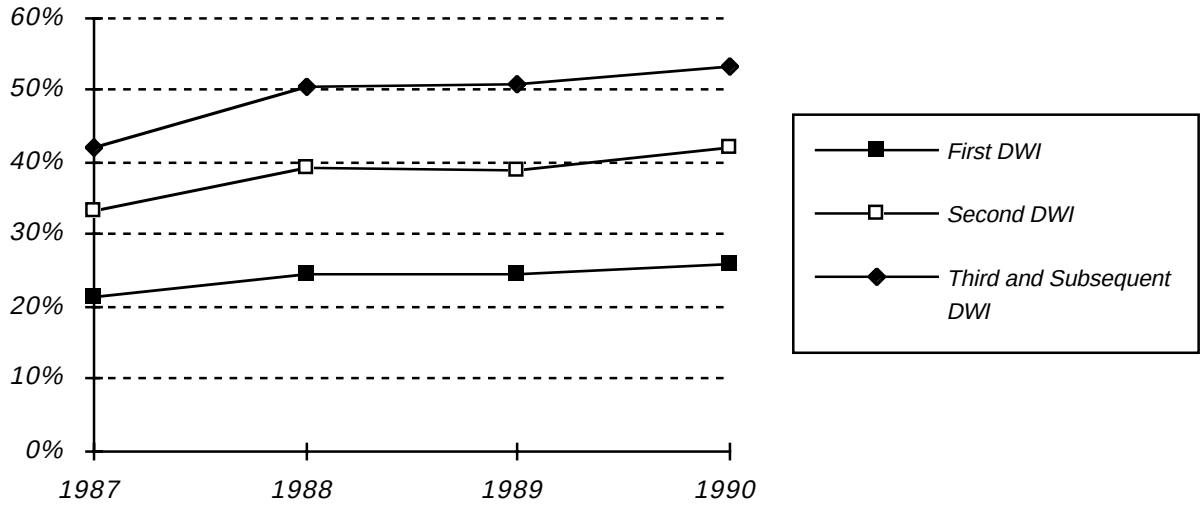
Blood/Breath Test Refusals

• Between 1987 and 1990, both first and repeat offenders became more likely to refuse blood/breath tests (Figure 3): the percentage of first offenders refusing rose from 21 percent to 26 percent, and the percent of third and subsequent offenders refusing rose from 42 percent to 53 percent.

• The probability of a blood/breath test refusal increases as the number of past DWI offenses increases: only 26 percent of 1990 first offenders refused the blood/breath test, compared to 42 percent of second offenders and 53 percent of offenders with three or more DWIs on their record.

• Those who refuse the blood/breath test are more likely to be arrested again for DWI than those who

FIG.3 PERCENT OF OFFENDERS WHO REFUSED THE BLOOD/BREATH TEST, BY NUMBER OF PREVIOUS DWIS: TEXAS, 1987-1990



consent to the test. Those who refuse the blood/breath test AND escape conviction for DWI are more likely to be rearrested than those who refuse the test but still get convicted for DWI.

Demographic Correlates

- Some demographic characteristics are more strongly associated with DWI recidivism than others. Males are more likely to be rearrested than females, and younger persons are more likely to be rearrested than older persons.
- There is marked regional variation with respect to arrests for DWI: the Plains region had the highest DWI arrest rate of 92.4 per 10,000 adult population, compared to a rate of 62.2 per 10,000 adult population in the Dallas/Fort Worth region. In the 1985–1988 DWIRTS study, San Antonio had the highest rate (111.3 per 10,000).

Historical Driving Record Correlates

- DWI offenders with a prior history of moving traffic violations are more likely to recidivate than offenders without prior moving violations: 20 percent of first offenders with three or more pre-DWI moving violations were rearrested within 2.5 years, compared to 14 percent of first offenders with no previous violations.
- DWI offenders driving on a suspended license are more likely to be rearrested than those with a valid license: within four years of initial DWI arrest, 29 percent of drivers with suspended licenses recidivated for a second DWI, compared to 17 percent of individuals with a valid license.
- DWI offenders who are involved in an accident are less likely to be rearrested than those not in an accident.

II. BACKGROUND

2.1 The BAC Limit, Alcohol Use, and High-Risk Driving

Alcohol is a major contributor in many driving fatalities, accidents, and injuries. Excessive alcohol use causes deterioration of driving performance and raises the risk of crashes. Texas law specifies that a person with a measured blood alcohol concentration (BAC) of 0.10 percent or over and operating a motor vehicle is considered to be legally intoxicated. People with measured BACs below 0.10 percent have also been convicted of DWI, but such cases are not normally prosecuted because of the difficulty in securing conviction.

The amount of alcohol a person must consume before becoming legally intoxicated, and the length of time that person remains legally intoxicated, varies with a number of factors including body weight, gender and health, but it is fairly described as a large quantity within a short period of time (a BAC table relating number of drinks to weight and time appears in Appendix A). For example, a 190-pound man in good health must drink the equivalent of six 12-ounce beers within one hour to achieve a BAC of 0.10 percent, which is achieved about 20 minutes after drinking the last beer. The body metabolizes about one drink per hour and the BAC level should return to the 0.08-0.09 percent range within an hour after drinking the sixth beer. The hypothetical subject would need to continue drinking beyond six beers to maintain a BAC which would support conviction for DWI under normal circumstances.

The relative risk of a motor vehicle accident increases exponentially as the BAC percentage of the driver increases: at BACs between .02–.04%, the chance of being in a fatal single-vehicle crash is almost one and one-half times greater than the sober level; at BACs .05–.09%, the risk rises to 11 times greater; at BACs .1–.14%, the risk is 48 times greater; and BACs over .15% increase the chance of fatal accident by over 360 times (Zodor 1989). Most people arrested for DWI in Texas who take blood/breath tests have BACs over .15%.

While it is possible for someone to be apprehended the first time he or she drives with a BAC of 0.10 percent or above, this eventuality is unlikely. Conservatively estimated, a person drives an average of two hundred times at a 0.10 percent BAC, or one hundred times at a 0.15 percent BAC, before being arrested for DWI (Beitel *et al.* 1975). Moreover, many more people drive while intoxicated than get convicted for DWI. An estimated 20 percent of adult Americans drive legally intoxicated each year, but only 5 percent are ever convicted of DWI in their entire driving career (Perrine 1990).

In the TCADA Adult Survey (TCADA 1988), of the 4,560 interviews administered to Texans aged 18 and over, about 44 percent reported having ever driven after drinking "too much" and roughly 5 percent recalled having been in trouble with the law because of DWI. During the school year before the 1990 TCADA School Survey, 12 percent of Texas secondary students drove a car after having a good bit to drink; about 29 percent of seniors drove drunk, and 8 percent of seniors did so four or more times (TCADA 1990). Clearly, drunk driving involves many Texans, both young and old.

2.2 Implied Consent

Driving is a privilege rather than a right. When receiving a Texas driver's license, one implicitly agrees to submit to blood/breath alcohol concentration testing whenever requested by an authorized law enforcement officer. Refusing the test can result in a 90-day license suspension. The suspension is "administrative" in the sense that the action is taken by the Department of Public Safety rather than a judge in the context of a court of law.

Some attorneys discourage their clients from submitting to blood/breath testing because a BAC of 0.10 percent is by definition "legally intoxicated." When BAC is not in evidence, the prosecution must find other ways of demonstrating impairment beyond a reasonable doubt. For many, increased chances of dismissal/acquittal may be well worth the inconvenience of a brief license suspension. In addition, an Attorney General's opinion (#JM959) ruled that

the driver license suspensions can be probated when an individual refuses to test.

2.3 Sentencing for DWI: Direct Conviction and Probation

Texas judges have a great deal of latitude when imposing sentences for DWI. Texas law provides the following range of sentencing options for *direct conviction:*

Fines:
- First Offense: $100-2,000
- Second Offense: $300-2,000
- Third Offense: $500-2,000

License Loss:
- First Offense: 3-12 months
- Second Or More: 6-24 months

Jail:
- First Offense: 72 hours-2 years
- Second Offense:15 days-2 years
- Third Offense: 30 days - 2 years (or TDCJ, 60 days-5 years)

Judges have the option of sentencing offenders to up to two years of probation in lieu of direct conviction on the first offense. These probated offenders may avoid jail time and/or license suspension. However, they are required to pay a monthly fee for probation services and complete an approved DWI education course.

The Office of Court Administration does not provide detail on sentences given to DWI offenders. However, given the common practice of plea bargaining, it is likely that maximum penalties are rarely imposed. Also, because district and county courts handle numerous DWI cases, many jurisdictions may have evolved sentencing guidelines.

2.4 DWI Education: An Established Program

Article 42.12, Section 13 (h), of the Code of Criminal Procedure provides that probated DWI offenders must attend and complete a certified DWI Education program. Failure to complete such a program within six months of convictions results in a 180-day administrative license suspension. DWI offenders receiving direct conviction are not required to attend the course.

Currently, the standardized DWI Education curriculum requires a minimum of 12 hours of classroom instruction. The program provides participants with information about the physiological and psychological effects of alcohol and other drugs on their driving abilities, and about chemical dependency. Also included are explanations of laws relating to impaired drivers, the meaning of the "implied consent" law, and discussions of penalties for subsequent offense. Probationers attending classes can discuss the attitudes underlying their impaired driving behavior, and are instructed as to how to change those attitudes to avoid future DWI behavior. The course also identifies those drivers who have serious problems with alcohol and/or drug use, and refers these drivers for further evaluation.

Certified DWI Education programs have been in operation in Texas since 1978, and have been available in all parts of the State since 1982. The program is administered by the Texas Commission on Alcohol and Drug Abuse.

2.5 DWI Intervention: A New Initiative

Article 42.12, Section 13 (j), of the Code of Criminal Procedure establishes the DWI Intervention program as a statewide initiative specifically designed for repeat offenders. The 32-hour, standardized curriculum-based program focuses on life issues rather than basic educational information. The goal of the program is to have the offender recognize his or her substance-related behavior, accept that there is a problem, and seek help through recovery services. The DWI Intervention program addresses life style, values, self-esteem, positive thinking, irrational beliefs, responsibility, physiological/psychological effects of substance abuse, alcoholism and the chemical dependency process, effects of alcohol and other drugs on families, co-dependency, Alcoholics Anonymous, treatment options and 12-step self-help groups, stress and coping, relapse prevention, problem solving and action planning. Although relatively new, the program has been implemented in 23 sites throughout Texas. Implementation is on-going.

III. DATA AND METHODOLOGY

3.1 Texas Driving Records

Current core data for the DWI Recidivism Tracking System (DWIRTS) come from the Texas Department of Public Safety. The computer tape files extracted from the Driver's License History File and the Driver's License Basic File, a combined total of 4.2 million driver license and history note records for 402,000 drivers, are provided for analysis. Drivers without DWI-related notes, deceased drivers, and license-expired drivers were removed, reducing the file to basic license and driver history information for 385,000 drivers. The report sample is further limited to those records with a DWI dating between January 1, 1987, and December 31, 1990. A total of 352,372 DWI events for 301,445 drivers were generated for the time period 1987-1990.

The Texas Department of Public Safety maintains the driving records of all persons licensed to operate motor vehicles in the state. Courts and traffic adjudication agencies are required to report all traffic-related convictions to the department. The department uses the Driver Improvement and Control (DIC) system to classify driver history notes. A "DWI event" is defined as a summary of driver history notes including at least one note falling into the following classifications: a DWI-related conviction or probation (Class 3), a DWI-related enforcement or administrative action (Class 2), and a DWI-related traffic violation or accident (Class 1). Enforcement or administrative actions include license suspensions and reinstatements, revocations, blood/breath tests, and mandatory attendance at special DWI courses. DWI-related violations or accidents include a subset of all violation/accident types that strongly implies DWI behavior, such as weaving among traffic lanes and colliding negligently with a parked vehicle.

In this DWIRTS study, a DWI is defined as a Class 3 or Class 2 DWI event; Class 1 events are only considered DWIs when coupled with a Class 3 or Class 2 event. DWI repeat offenders, also called DWI recidivists, are drivers having two or more Class 3 or Class 2 events. Among the study sample of 301,445 drivers, 63 percent (188,401 drivers) had only one DWI and 37 percent (113,044 drivers) had two or more DWIs. About 89 percent were male drivers, 8 percent had their auto insurance cancelled, and 2 percent received a habitual violator petition (given to those incurring at least four moving violations within one year, or seven moving violations within two years).

The 301,445 drivers incurred 352,372 DWI events between 1987-1990. One simple way to value the completeness of the DWIRTS data used in this study is to compare the DWIRTS-derived numbers to the actual number of DWI convictions adjudicated by county-level courts in Texas. Since DWI arrests are usually not adjudicated for a few months and the Texas Judicial System annual reports are in fiscal rather than in calendar years, it is hard to determine the exact number of cases initiating from 1987 through 1990 DWI arrests that were actually adjudicated. Assuming the average length of time to adjudicate a DWI is three months, the total number of cases of DWI convictions adjudicated by county-level courts would be estimated at 341,804 (derived by adding 42 percent of fiscal 1987 convictions, all fiscal 1988-1990 convictions, and 58 percent of fiscal 1991 convictions resulting from arrests which took place in calendar 1987 through 1990). This number is only 3 percent different from the 352,372 convictions detected by DWIRTS. Therefore, the DWIRTS data accurately reflects the number of DWIs on the driving record system and the recidivism estimations given in this report do not significantly under- or over-represent the actual statewide recidivism rates in Texas.

3.2 Methodology

SAS computer programming in a CMS mainframe was used to process the large DWIRTS dataset. The program examined the driver history notes, grouped notes into DWI events, assigned each note a common event sequence number, and summarized important information for each DWI event. Based on individual notes, the DWI event contains such infor-

mation as the driver age and years of driving experience at the time of the event, whether or not the driver was assigned to (and completed) a DWI Education class, and whether or not the event resulted in a license suspension. For use in recidivism analysis, it is important to include the computed "number of days to the next DWI" in the event information.

The DWI offenders were followed beginning the date of initial arrest until the date of rearrest or until the censor date. In order to capture the complete driving records, the censor date (December 1, 1991) was five months prior to the computer tape generated date. There is a small difference in the censor date computation between the current study and the previous 1985-1988 study (Fredlund 1991). Compared to the previous report, the length of time between the tape generated date and the censor date in this report is about three months longer.

The last year used for the research period in the current study was 1990. This end-date provides a sufficient length of time for follow-up analysis and for the dataset to become mature and complete. In other words, the chosen end-date allows for most of the relevant data pertaining to a DWI event to occur and be recorded. Using a four-year followup period produces a sufficiently robust dataset to fully analyze recidivism behavior over time.

Survival time analysis is employed in exploring the DWI recidivism rates by different factors over time. This method allows researchers to follow a group of offenders convicted at a given time and document those who recidivate at least once over a certain observation period. From a statistical point of view, the length of time until recidivism is a survival time. Instead of using the term "survival," this study reports "recidivism" (or "failure") rate, which can be computed as [1 - the survival rate]. The recidivism rate is actually the percentage of offenders who have become recidivists within a constant period of time.

The survival analyses are performed using the life table estimates in the SAS Lifetest Procedure. The life table estimates are computed by counting the censored observations as well as the uncensored observations. The cumulative distribution function of the failure time which is estimated at the beginning of the interval is used for the measurement of cumulative recidivism rates. The hazard rate, which is for the measurement of daily risk (or probability) of rearrest, is estimated at the midpoint of the interval. All differences identified herein are statistically significant.

IV. RESULTS

4.1 Trends in DWI Arrests and Alcohol Consumption

According to Uniform Crime Reports from the Department of Public Safety, there were a total of 433,537 DWI arrests made by State and local law enforcement authorities between 1987 and 1990. More people are arrested for DWI than other reported criminal offense: of all Texas adults (17 years and over) arrested in 1987-1990, approximately 14 percent were for DWI compared to 11 percent for larceny theft and 8 percent for drug abuse violations. The estimated costs of the publicly financed criminal justice system for DWI arrests were about $60 million in 1989 (Liu 1992).

Table 1 shows DWI arrest data from the Texas Department of Public Safety. The total DWI arrests decreased 21.4 percent between 1985 and 1989 (from 131,043 to 103,008), and then increased slightly in 1990. Males are much more likely to be arrested for DWI than females (91 percent versus 9 percent). Drivers under 35 years of age are at higher risk of being arrested for DWI than drivers 35 and older. Almost two-thirds of the DWI arrests are of persons aged 17-34, compared to just over one-third of drivers who are 35 and over. The data indicates that males aged 17-34 are at highest risk of DWI, and implies that DWI prevention efforts should be directed to this group.

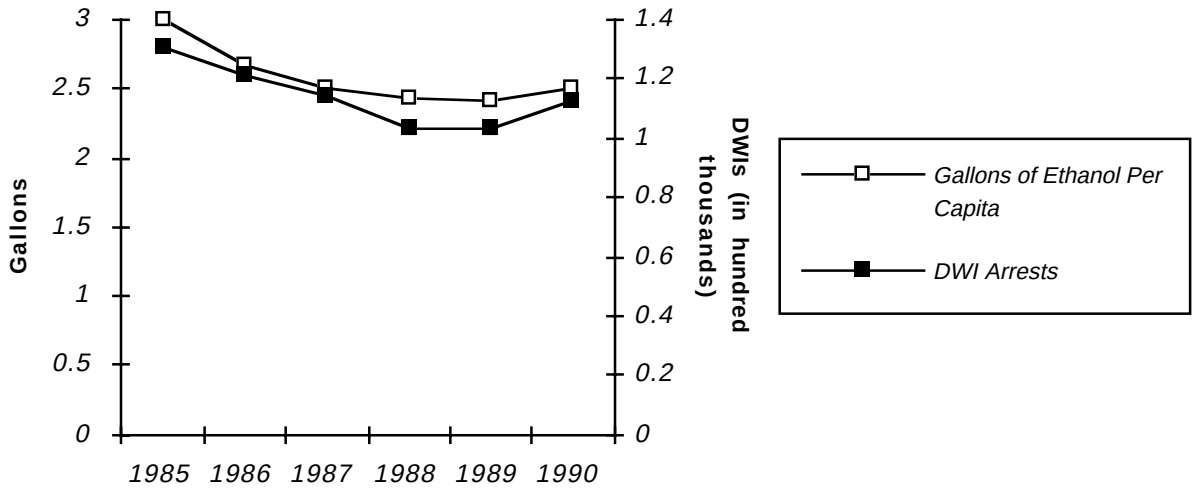
It is possible that public awareness and the DWI Education program resulted in the overall decrease in DWI arrests between 1987–1990. Another possible factor in the decrease is the reduction of per capita alcohol consumption during that same time period. Figure 4 indicates that per capita alcohol consumption decreased from 3.0 gallons of ethanol per person in 1985 to 2.4 gallons of ethanol per person in 1989, then slightly increased to 2.5 gallons in 1990 (estimation of ethanol contents are 0.045 for beer, 0.09 for ale, 0.129 for wine, and 0.414 for whiskey). This trend of per capita alcohol consumption is consistent with the DWI arrest trend in Texas, and implies that alcohol consumption can be an important factor in the decrease of DWI arrests (as opposed to changes in law enforcement efforts).

TABLE 1: DWI ARRESTS BY AGE AND SEX: TEXAS, 1985-1990

	Number of DWI Arrests					
	1985	*1986*	*1987*	*1988*	*1989*	*1990*
Total	*131,043*	*121,491*	*114,245*	*103,482*	*103,008*	*112,802*
Males	*120,272*	*111,036*	*104,150*	*93,867*	*93,091*	*101,617*
<17	*342*	*358*	*308*	*259*	*227*	*215*
17-34	*79,354*	*73,673*	*67,019*	*60,138*	*58,579*	*64,286*
35+	*40,576*	*37,005*	*36,823*	*33,470*	*34,285*	*37,116*
Females	*10,771*	*10,455*	*10,095*	*9,615*	*9,917*	*11,185*
<17	*52*	*60*	*30*	*31*	*16*	*28*
17-34	*7,158*	*6,809*	*6,665*	*6,203*	*6,382*	*7,118*
35+	*3,561*	*3,586*	*3,400*	*3,381*	*3,519*	*4,039*

Source: Crime in Texas, Uniform Crime Reporting, Texas Department of Public Safety, 1985 - 1990.

FIG.4 ALCOHOL CONSUMPTION (GALLONS PER TEXAS ADULT 13+) AND DWI ARRESTS IN TEXAS, 1985-1990



4.2 DWI Offenders by Year

During the four-year study period, there were a total of 352,372 DWI offenders in Texas (226,431 first offenders and 125,941 repeat offenders). The pattern of first and repeat DWI offenders in Figure 5 seems to confirm the relationship between DWI arrest and alcohol consumption mentioned above. The number of DWI first offenders in Texas decreased by 10 percent between 1987 and 1989 (from 60,138 to 54,376), and then increased to 56,445 in 1990. The initial decline and subsequent increase in first DWI offenders between 1987 and 1990 were consistent with the trends of all DWI arrests in Texas shown in Table 1.

FIG.5 NUMBER OF FIRST AND REPEAT DWI OFFENDERS IN TEXAS, 1987-1990

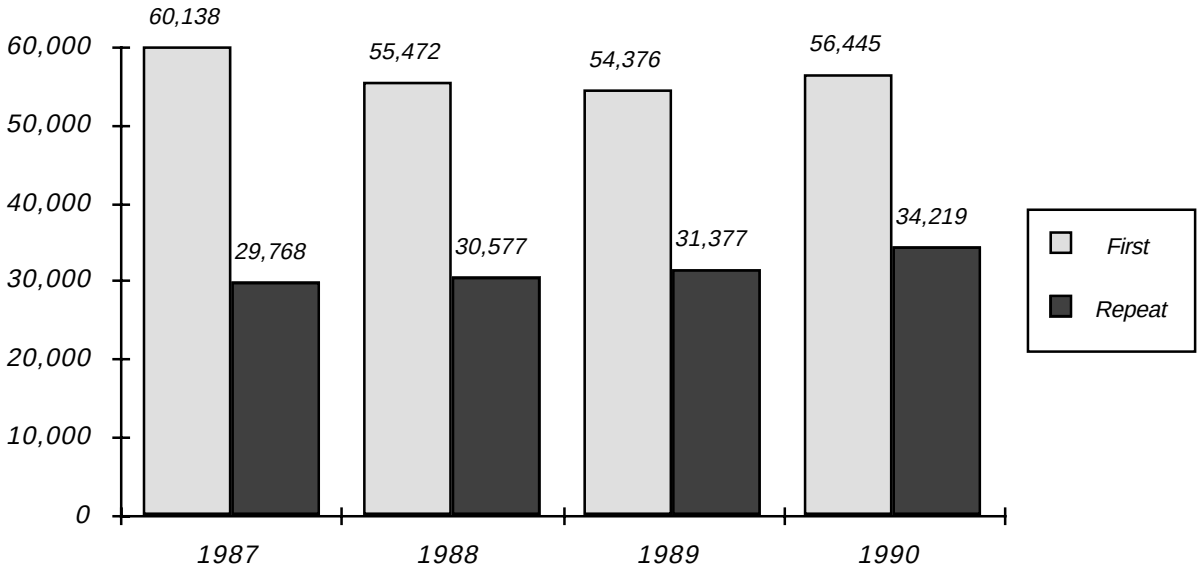
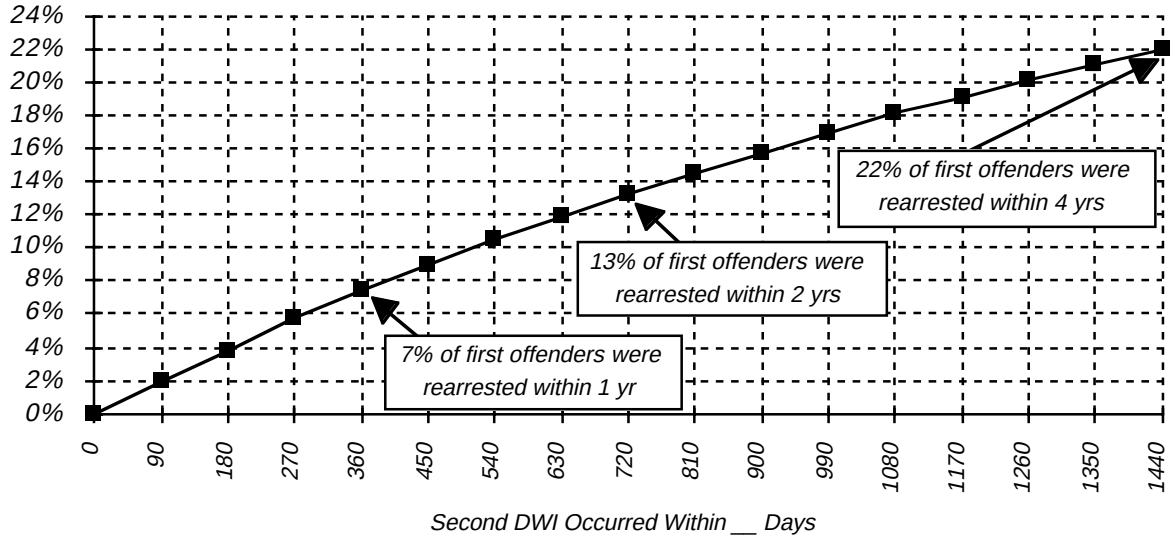


FIG.6 CUMULATIVE DWI RECIDIVISM: TEXAS FIRST OFFENDERS, 1987-1990



Repeat DWI offenders, on the other hand, increased modestly from 29,768 in 1987 to 34,219 in 1990. Repeat DWI offenders grew as a proportion of all DWI offenders from 33 percent in 1987 to 38 percent in 1990. This information implies that a relatively enduring minority of Texans persist in drinking and driving. State policy regarding the DWI countermeasures system should continue to focus on the implementation of DWI intervention programs to reduce recidivism among multiple offenders.

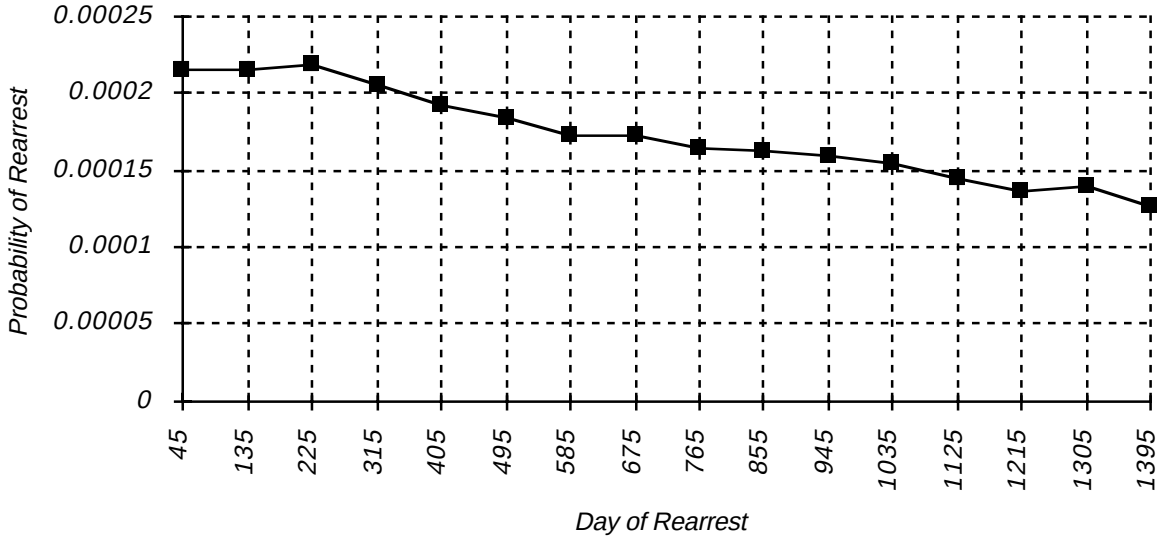
4.2.1 Recidivism Measurement

Recidivism, or the tendency to relapse to a previous stage of behavior, is the most frequent method used to evaluate countermeasure programs and effectiveness. The current study measures DWI recidivism—that is, the number of people re-arrested for DWI—and the data are based on DWIRTS-processed driving records in Texas. The follow-up time of recidivism is computed starting from the date of a DWI event to the date of the next DWI event (if recidivism occurs), or to the censor date of the study (if recidivism does not occur). The follow-up time can be an arbitrary figure. For example, a "four-year recidivism rate" is the percentage of DWI offenders who get arrested again for DWI within four years of a prior DWI.

Cumulative Recidivism Rates: Figure 6 is a graphic representation of the combined recidivism rate of 226,431 individuals with a first DWI offense between 1987 and 1990. The figure's horizontal axis represents the number of days from the initial arrest to rearrest, and the vertical axis is the cumulative percentage of recidivism of first offenders. Through time, an increasing proportion of the original group of individuals recidivated. About 7 percent of first DWI offenders were rearrested within one year, 13 percent were rearrested within two years, and 22 percent were rearrested within four years of initial arrest.

Daily Risk of Recidivism: The measurement of daily probability of rearrest demonstrates the daily changes of DWI recidivism and can indicate which period of days (or years) would be the most critical time for DWI recidivism prevention. Figure 7 presents the daily risk of recidivism for Texas first DWI offenders during 1987-1990. For example, on day 45 after initial arrest, the daily probability of rearrest for a second DWI was 0.00022, which means about 22 per 100,000 first offenders were rearrested exactly 45 days following initial arrest. At the end of the follow-up time (day 1395), the probability of rearrest

FIG.7 CHANGING DAILY RISK OF RECIDIVISM THROUGH TIME: TEXAS FIRST OFFENDERS, 1987-1990



decreased to 13 per 100,000 first offenders. First offenders were most likely to recidivate for a second DWI during year one; therefore, the first year following initial arrest is the most important period for DWI recidivism prevention among first offenders.

4.2.2 Multiple DWI Offenders

The more times a person has been convicted of DWI, the more likely future recidivism will be. Figure 8 shows the cumulative DWI recidivism rates for three different groups of offenders. In the 1987-1990

FIG.8 CUMULATIVE DWI RECIDIVISM BY NUMBER OF PRIOR CONVICTIONS: TEXAS, 1987-1990

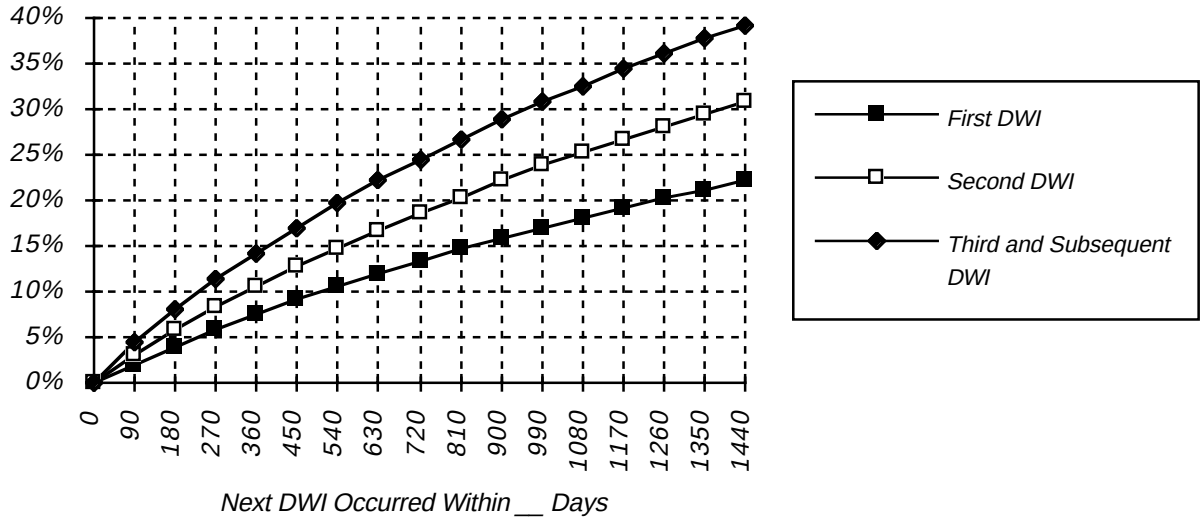
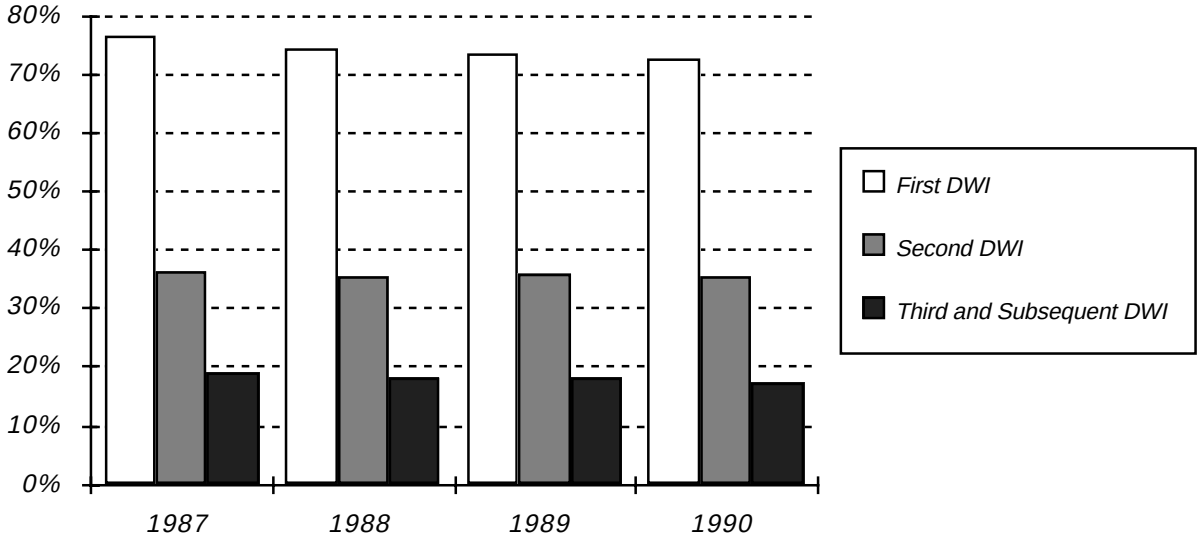


FIG.9 PERCENT OF OFFENDERS ASSIGNED DWI EDUCATION BY NUMBER OF PREVIOUS DWI CONVICTIONS: TEXAS, 1987-1990



period, there were in total 226,431 DWI offenders arrested for the first time, 78,056 arrested for the second time, and 47,885 arrested for the third and subsequent time. The overall recidivism rates of first offenders are much lower than those of multiple offenders. Within four years, about 39 percent of third and subsequent offenders were rearrested for DWI, compared to 31 percent for second offenders and 22 percent for first offenders. The more prior DWI convictions, the higher recidivism rate becomes. Thus, intervention early in DWI careers could expect to gain significant results in recidivism reduction. For each 100 second offenses prevented, one also prevents an estimated 39 third and subsequent offenses in future years.

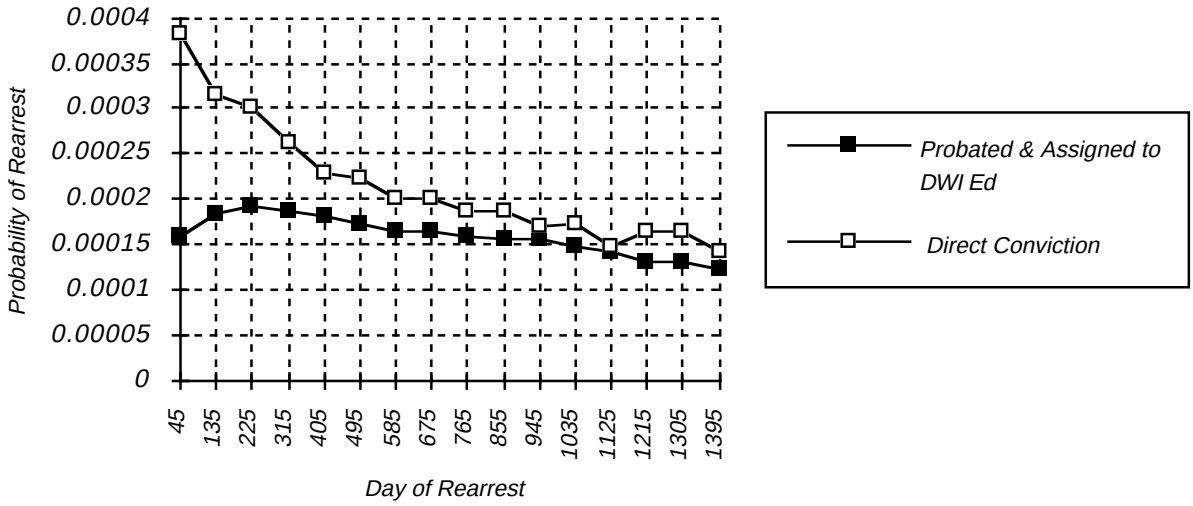
4.3 DWI Education Program

4.3.1 DWI Education and Recidivism

The notation of driver alcohol education programs on the driving records is an important indicator of a DWI offense. Between 1987 and 1990, 58 percent (204,585) of the total DWI offenders in Texas were assigned to probation and the DWI Education course taught either by local probation officers or private instructors. A total of 54,960 offenders arrested for DWI in 1987 were assigned to the probation/DWI education sanction; 50,022 offenders arrested in 1988, 49,005 offenders arrested in 1989, and 50,598 offenders arrested in 1990 were assigned. The trend of decreasing offenders assigned to probation/DWI education between 1987 and 1989, and the slight increase in 1990, corresponds to the trend of number of DWI arrests.

Among the DWI offenders assigned to the education class, 82 percent (168,090) were first offenders and 18 percent (36,495) were repeat offenders. The courts assigned about three out of four first offenders to a DWI Education program, compared to less than one out of three repeat offenders (since the DWI Intervention program designed specifically for repeat offenders was only begun in is fiscal year 1990, no statistics are yet available for that separate curriculum). Toward the end of the 1987-1990 period, the courts tended less often to assign offenders to the DWI Education class. Figure 9 shows the declining percentages of DWI offenders receiving the probation/DWI education sanction from 1987 through 1990. The percentage decreased from 76 percent to 73 percent among first DWI offenders, 36 percent to 35 percent among second DWI offenders, and 19 percent to 17 percent among third and subsequent DWI offenders. Part of the reason is that more offenders are opting for direct conviction instead of probation.

FIG.10 RISK OF REARREST FOR SECOND DWI, PROBATION/EDUCATION VERSUS DIRECT CONVICTION: TEXAS FIRST OFFENDERS, 1987-1990



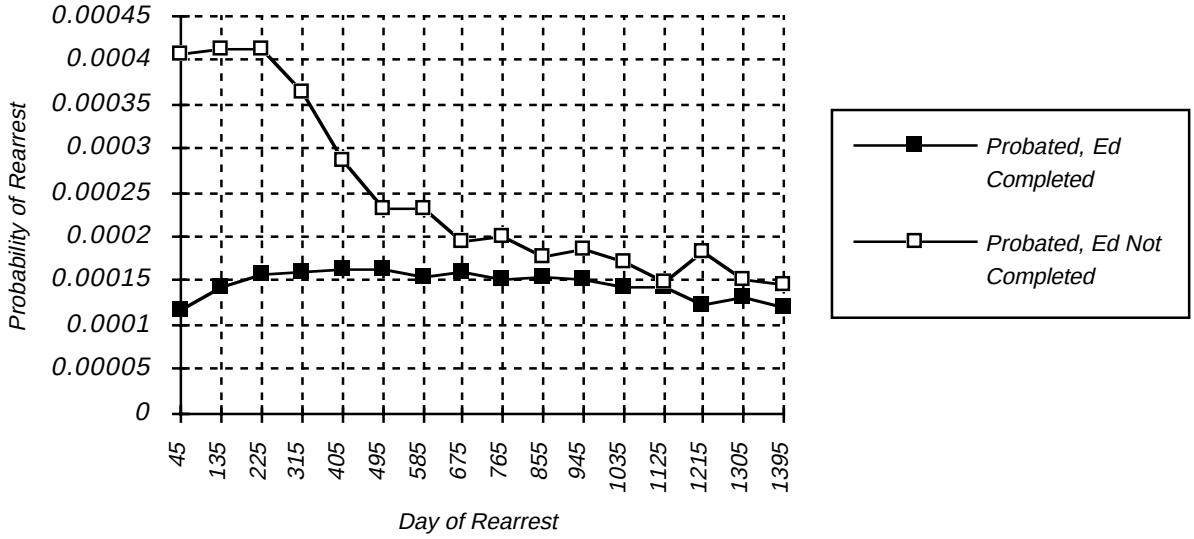
Increasing the level of participation in DWI education programs would be valuable in reducing alcohol-impaired driving. Offenders who are probated and assigned to the DWI Education program are less likely to recidivate within one year than those who are directly convicted and receive no DWI education. Figure 10 presents the daily probability of rearrest for second DWI between two groups (probation/education versus direct conviction) of first offenders. Among the first DWI offenders arrested between 1987 and 1990 in Texas, 168,090 received the probation/DWI education sanction and 58,341 received direct conviction. It is estimated that at 45 days after initial arrest, about 16 per 100,000 offenders assigned to the DWI Education course were rearrested for another DWI, compared to 38 per 100,000 offenders who received direct conviction. The gap between the two daily probability curves narrowed down significantly at 585 days after the initial arrest and stayed small through the rest of the follow-up time.

Throughout the first 585 days (or 1.5 years) following initial arrest, the risk of rearrest for first offenders receiving direct conviction was about two times higher than for those assigned to the education class. The difference could be from differences in treatment (for example, direct conviction versus probation/education) or from differences between the groups themselves (for example, those more likely to recidivate received direct conviction). Since this study is not based on random assignment to experimental groups, this question cannot be rigorously answered. However, the results do have face-validity indicating that the different rearrest rates are from differences in treatment. The normal probation length for a DWI conviction is 1 to 2 years, which corresponds to the 1.5 years during which probated offenders have significantly lower daily rearrest rates. Although the daily rearrest rates remained slightly higher among offenders receiving direct conviction after 1.5 years of initial arrest, the rates became quite similar for both groups. This suggests that increased participation in DWI Education class by DWI offenders would help prevent continued drinking and driving and reduce the incidence of rearrest for DWI.

4.3.2 Effect of DWI Education on Recidivism

Among those probated and assigned to DWI Education class during 1987-1990 in Texas, 15 percent of first DWI offenders and 24 percent of repeat DWI offenders failed to complete the course. Offenders who completed the DWI education were less likely

FIG.11 RISK OF REARREST FOR SECOND DWI BY EDUCATION COMPLETION STATUS: TEXAS FIRST OFFENDERS, 1987-1990



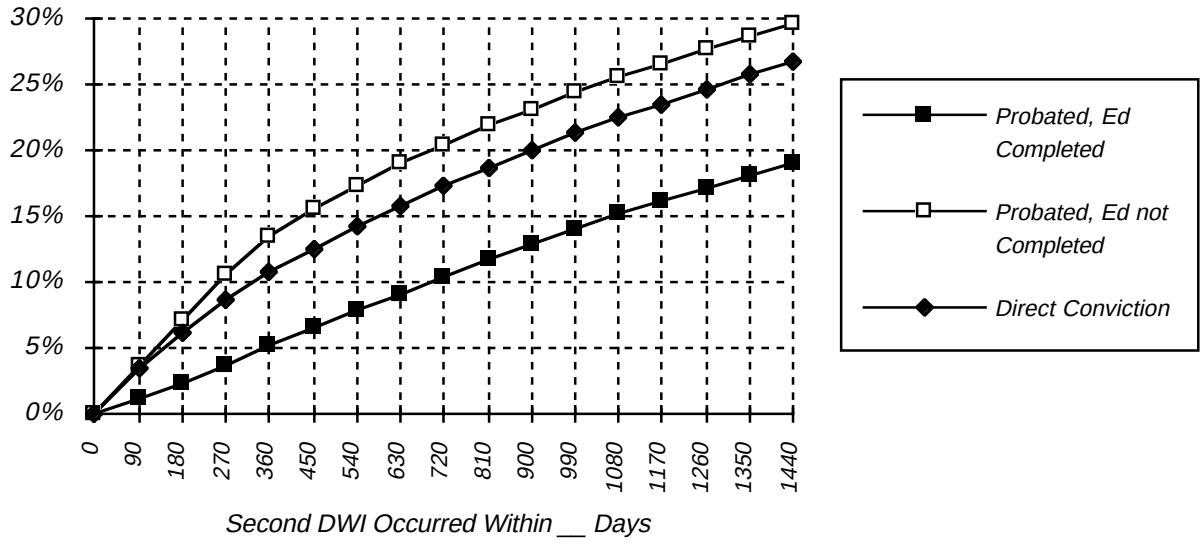
to be rearrested for DWI than those who did not complete the class. Figure 11 illustrates the daily probability of rearrest for second DWI between the two groups (143,168 education-completed versus 24,922 non-completers) of first offenders. At 45 days after initial offense, about 12 per 100,000 first offenders who completed the DWI Education class recidivated for second DWI, compared to 41 per 100,000 offenders who did not complete the course. In other words, the class non-completers were more than three times as likely as the class completers to be arrested again for DWI on day 45. After 675 days (or 1.8 years) of initial arrest, the difference between the daily rearrest rates of class completers and non-completers became narrower and remained small through the rest of the follow-up.

During the two years after initial offense, DWI Education class completers had a much lower daily rearrest rate than those non-completers. The difference could be attributable to the course completion or to differences between the groups themselves. However, the daily rearrest rates of both groups after two years of initial offense are roughly equivalent, which suggests underlying similarity between groups with respect to recidivism. Thus, the DWI Education class could have a positive impact on reducing recidivism among course completers.

Of the total first DWI offenders between 1987 and 1990 in Texas, 63 percent (143,168) were probated and completed the DWI Education class, 26 percent (58,341) received direct conviction, and 11 percent (24,922) were probated but did not complete the class. The cumulative recidivism rates among these three groups of first offenders are shown in Figure 12. Within one year (360 days) of initial arrest, only 5 percent of the probated offenders who completed the class were rearrested for second DWI, compared to 11 percent of those receiving direct conviction, and 13 percent of the probated non-completers. First offenders who did not complete the education class are about two and half times more likely to recidivate within one year than those class completers, and slightly more likely to recidivate within a year than those directly convicted. At the end of a four-year period (1440 days), a total of 19 percent of probated education completers had been rearrested for second DWI, compared to 27 percent of those who were directly convicted, and 30 percent of probated education non-completers.

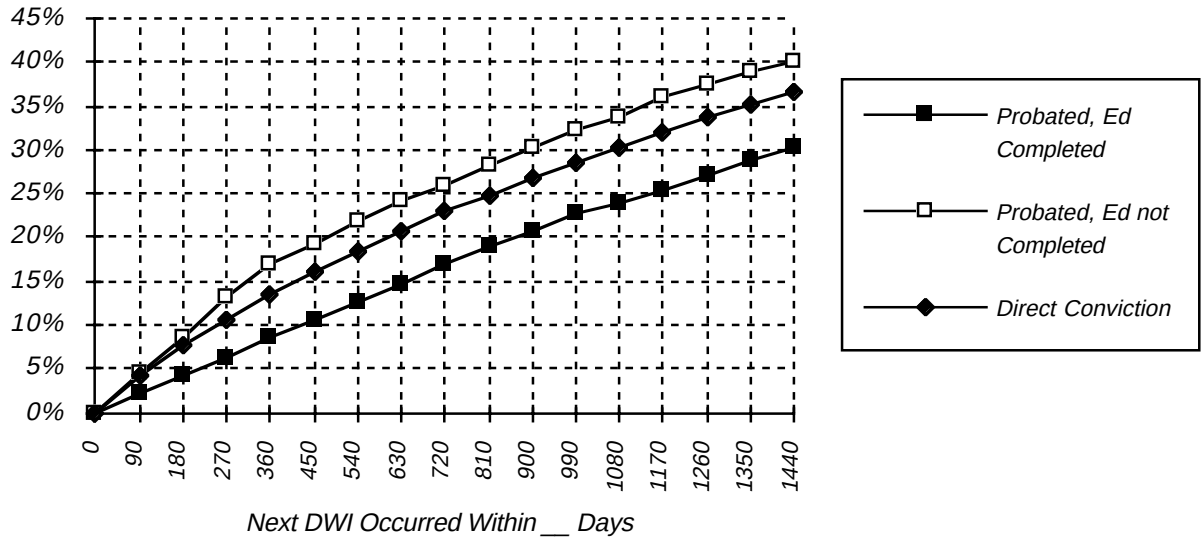
For multiple DWI offenders, completion of the DWI Education class also results in lower recidivism rates than non-completion of the class. The offenders whose third DWI arrest occurred during the period of 1987-1990 were chosen for the following recidivism

FIG.12 CUMULATIVE DWI RECIDIVISM BY EDUCATION CLASS COMPLETION STATUS: TEXAS FIRST OFFENDERS, 1987-1990



analysis. Of the total third DWI offenders, 22,741 received direct conviction, 4,521 were probated and completed the education class, and 1,618 were probated but did not complete the class. As shown in Figure 13, third offenders who completed the education class had the lowest recidivism rate of 9 percent within one year, followed by those receiving direct conviction (13 percent) and the class non-completers (17 percent). Within four years, the cumulative recidivism rate for next (fourth) DWI would be 30 percent for education course completers, 37 percent for direct convictees, and 40 percent for education course non-completers. As with first offenders, probated third offenders not completing the education

FIG.13 CUMULATIVE DWI RECIDIVISM BY EDUCATION CLASS COMPLETION STATUS: TEXAS THIRD OFFENDERS, 1987-1990



class recidivated at a much higher rate than those completing the course.

Figure 12 and Figure 13 illustrate that third DWI offenders exhibit a much higher recidivism rate than first DWI offenders. Repeat DWI offenders do not respond as well as first DWI offenders to the DWI Education program, according to these recidivism measurements. A more intensive DWI intervention effort has been designed and implemented for these multiple offenders; as of October 1992, there were 23 DWI multiple offender programs in operation in Texas. Future studies would be able to show comparative recidivism rates for repeat offenders completing the intervention program.

Comparison of the current and previous DWIRTS study (Fredlund 1991) estimates shows that there has not been much change in recidivism rates among the three groups of DWI offenders (class completers, class non-completers, and those directly convicted). For example, the four-year cumulative recidivism rates for first DWI offenders in the current 1987-1990 study are only slightly higher than those in the previous 1985-1988 study (17 percent of class completers, 26 percent of non-completers, and 24 percent of direct convictees recidivated by year four in the first study, compared to 19 percent, 30 percent, and 27 percent in the current study).

4.4 Blood/Breath Test Refusals

Any person who drives on the public beach or highways of Texas has implicitly given consent to a chemical breath or blood test to determine the blood alcohol content if suspected of DWI. If the driver refuses the test, the Department of Public Safety can file a proceeding to suspend one's license for 90 days.

The percentage of Texas drivers refusing to take a blood/breath test (B/BT) increased as the number of their DWIs increased. About twice the proportion of repeat DWI offenders than first offenders refused the B/BT in Texas during 1987-1990 (Figure 14): in 1990, 53 percent of third and subsequent offenders refused the B/BT compared to only 26 percent of first offenders. The percentage of first offenders refusing the B/BT grew slightly toward the end of the 1987-1990 period, yet repeat DWI drivers still refused the B/BT more frequently. Some possibilities regarding the upward trend of B/BT refusals include the following: B/BT refusal license suspensions can be appealed to justice of the peace court where they are sometimes probated; many drivers with a suspended license can get an occupational license which allows them to drive to and from work; even when a license remains fully suspended, chances of getting

FIG.14 PERCENT OF BLOOD/BREATH TEST REFUSALS BY NUMBER OF PREVIOUS DWI CONVICTIONS: TEXAS, 1987-1990

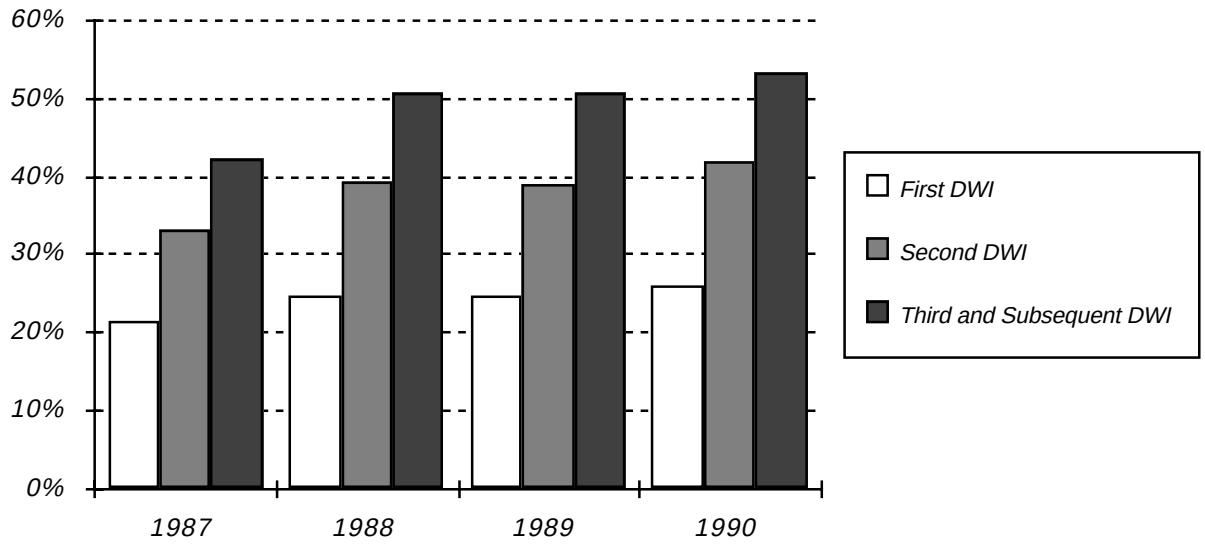
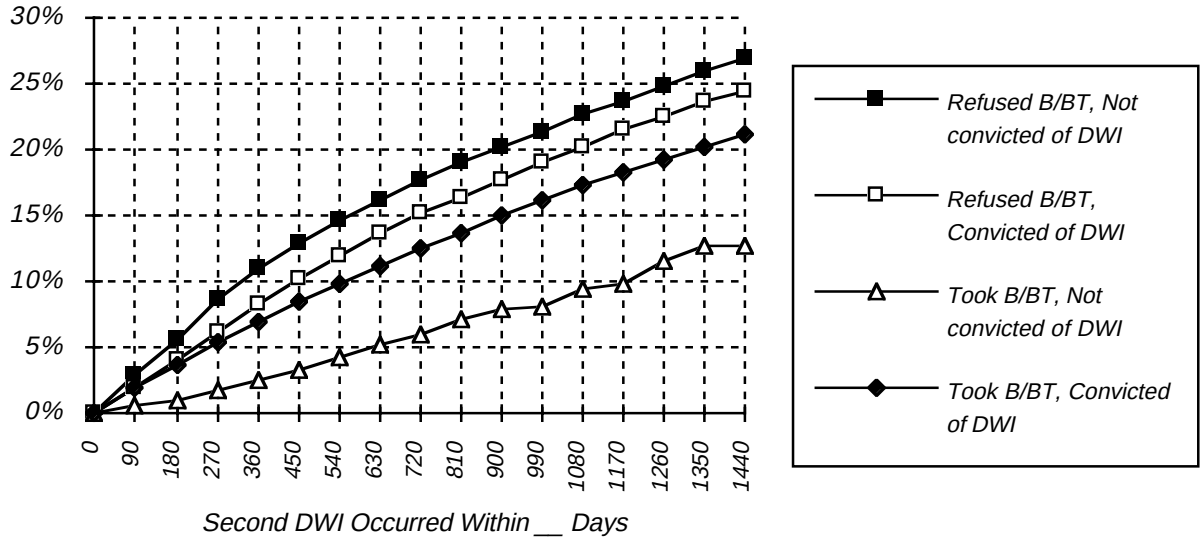


FIG.15 CUMULATIVE DWI RECIDIVISM BY BLOOD/BREATH TEST AND CONVICTION STATUS: TEXAS FIRST OFFENDERS, 1987-1990



apprehended are minimal; even if apprehended, the violation results only in a fine; and chances of dismissal or acquittal of the DWI charge are better if BAC evidence derived from the B/BT is not available to the prosecution.

Of the total 226,431 first DWI offenders during 1987-1990, about 76 percent took the B/BT and received DWI convictions, 15 percent refused the B/BT but still received DWI convictions, 9 percent refused the B/BT and were not convicted of DWI, and only 1 percent took the B/BT and avoided DWI conviction. Figure 15 illustrates the recidivism rates of these four groups of first offenders. Offenders who refused the B/BT had much higher recidivism rates than those taking the B/BT. Among B/BT refusers, drivers not convicted of DWI were more likely to be rearrested than those convicted of DWI. Four years after the initial arrest, 27 percent of B/BT refusers not convicted of DWI had been rearrested, compared to 25 percent of convicted refusers, 21 percent of those who took the B/BT and were convicted of DWI, and 13 percent of those who submitted to the test but were not convicted.

Similar DWI recidivism rates based on blood/breath test refusals were found in the first DWIRTS study (Fredlund 1991): 26 percent of blood/breath test refusers not convicted of DWI were rearrested within four years, compared to 23 percent for convicted refusers and 19 percent for those who took the blood/breath test and were convicted of DWI. Though the recidivism rates were slightly lower in the first study, both studies confirm the same message: blood/breath test refusers are more likely to be arrested again for DWI than those who consent to the test, and those who refuse the blood/breath test AND avoid conviction for DWI are more likely to be rearrested than those who refuse the test and get convicted.

4.5 Demographic Characteristics

Research has found that age and gender are important factors attributed to DWI recidivism (Donovan *et al*. 1983). Younger DWI offenders are more likely to recidivate than older ones. Males are more likely to be rearrested for DWI than females. Therefore, changes in the age and sex distribution of drivers can consequently alter recidivism rates.

4.5.1 Age

A large proportion of alcohol-related accidents and DWI arrests involves youthful drivers. Figure 16 shows the ratio of first-time DWI arrests to total population by age group. Approximately 195,000

drivers aged 18-44 were arrested for a first DWI between 1987 and 1990. Every year in Texas about 1 out of 100 people 18-25 years of age are arrested for their first DWI. The arrest rate in the 18-25 age group is significantly higher than any other age group. One reason may be that persons aged 18-25 consume more alcohol on average than other age groups (TCADA 1988). In addition, their general driving inexperience and impetuousness may result in greater risk of DWI arrest (Donovan *et al*. 1983). Young drunk drivers can behave differently from older drunk drivers, and this may influence youth DWI detection and arrest.

Drivers with repeat DWI arrests tend to be slightly older than first offenders. Among the DWI first offenders in Texas during 1987-1990, 30 percent were 18-25 years old and 56 percent were 26-44. In contrast, less than one in five repeat DWI offenders were under age 25, while almost two out of three repeat DWI offenders were 26-44 years old.

Younger drivers are more likely to be rearrested for DWI than older drivers. Four years after the time of first DWI arrest, about 25 percent of the 18-25 age group and 23 percent of the 26-34 age group had been rearrested, compared to 17 percent of the 45-64 age group, and 12 percent of the 65 and over age group (Figure 17). In Texas, a first time DWI offender aged 18-25 has about 50 percent greater chance of recidivism than a Texan 65 years of age or older. The first DWIRTS study (Fredlund 1991) showed similar patterns of recidivism by age group for first DWI offenders.

4.5.2 Gender

The great majority (87 percent) of first-time DWI offenders during 1987-1990 were male, making DWI a gender-specific event. The driving records in Texas during 1987-1990 indicate that only 10 percent of all DWI offenders are female (13 percent of first offenders and 6 percent of repeat offenders). Male repeat offenders increased from 35 percent to 40 percent of all male DWIs, and female repeat offenses grew from 19 percent to 22 percent of all female DWIs between 1987 and 1990. These data again reflect a relative increase in DWI recidivism.

Male first offenders are also more likely to be rearrested for DWI than female first offenders. Figure 18 shows significant differences in the cumulative DWI recidivism rates for the two gender groups. The cumulative rearrest rate within two years is 14 percent for males and 9 percent for females; after four years, those rates are 23 percent and 15 percent, respectively. One possibility for the differences in recidivism is that more drinking men than drinking women may be driving, resulting in a greater poten-

FIG.16 AGE AT FIRST DWI ARREST AS RATIO OF POPULATION: TEXAS, 1987-1990

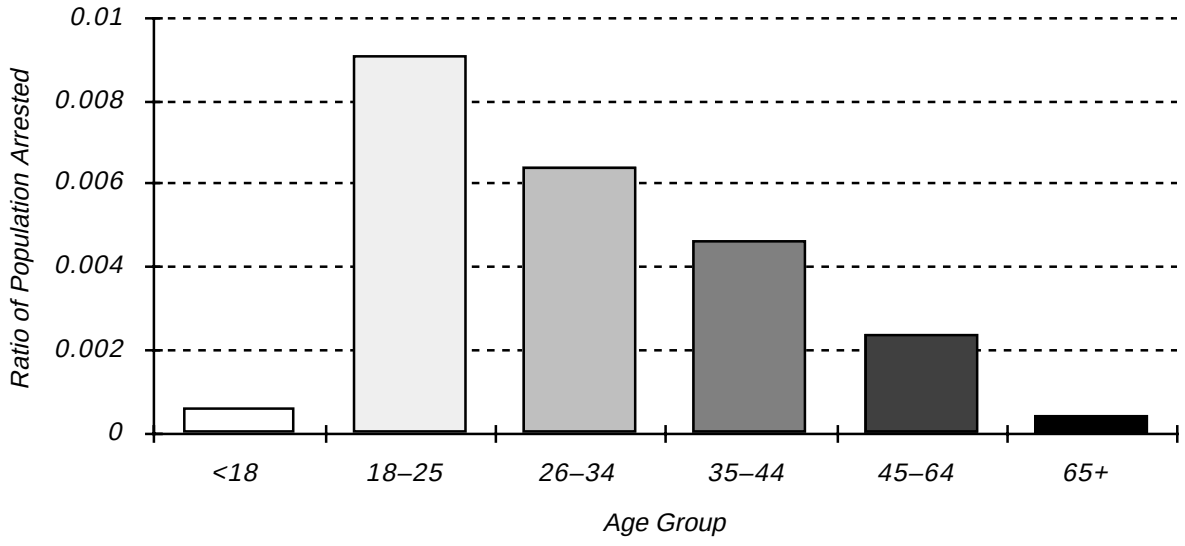
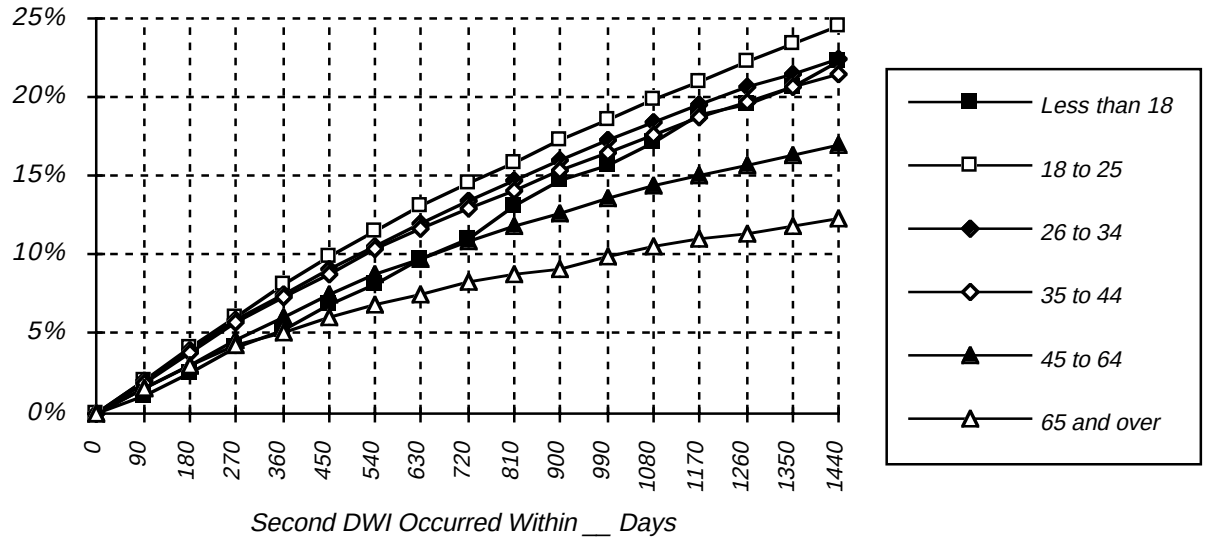


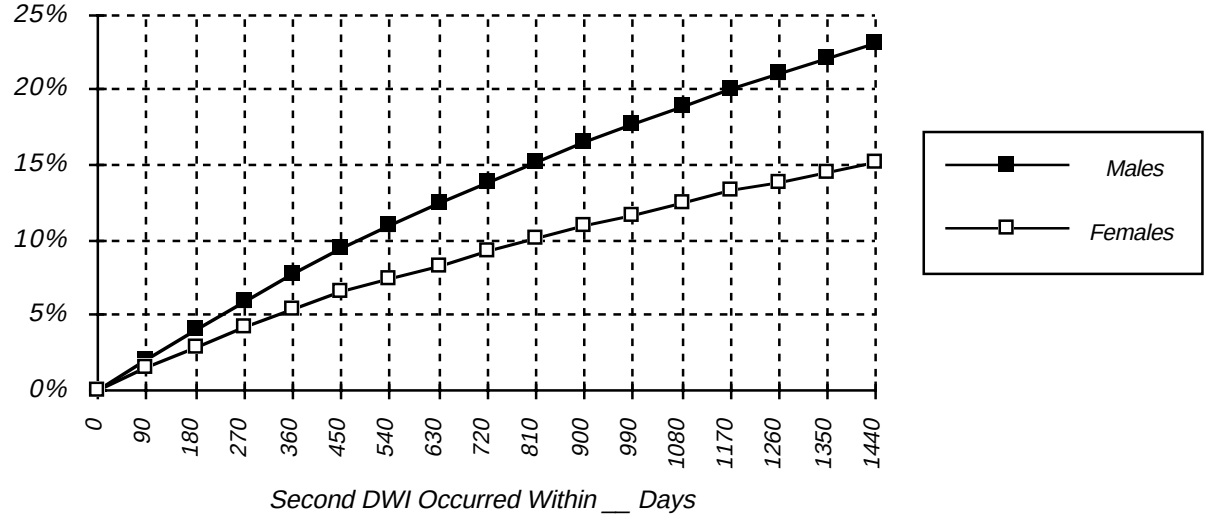
FIG.17 CUMULATIVE DWI RECIDIVISM BY AGE GROUP: TEXAS FIRST OFFENDERS, 1987-1990



tial for DWI violations and arrests of males. Another suggestion is that the lifestyles and police attitudes of male offenders may differ from those of female offenders, which may make males more likely to recidivate (Yu *et al.* 1992).

Between the first DWIRTS study (1985–1988) (Fredlund 1991) and the present study (1987–1990), the cumulative four-year recidivism rate increased slightly for both male first offenders (from 21 percent to 23 percent) and female first offenders (from 13 percent to 15 percent). Both studies show that male offenders are more likely to be arrested again for DWI than female offenders.

FIG.18 CUMULATIVE DWI RECIDIVISM BY GENDER: TEXAS FIRST OFFENDERS, 1987-1990



4.6 Regional Differences

This section presents the estimate of incidence of DWI recidivism within specific regions and localities in Texas. There are noticeable regional differences in recidivism rates for Texas first DWI offenders. There are eight statewide regional groups of counties, which are consistent with the eight regions in the previous DWI recidivism study (Fredlund 1991) and are detailed in Appendix B. The two largest populated regions are in Dallas/Fort Worth and Houston areas, which cover more than 50 percent of the total adult Texas population aged 18 and over. To obtain the total four-year (1987-1990) Texas population by region, it was approximately estimated by multiplying the 1990 population in Appendix B by four.

The residence ZIP code in the DWIRTS was used to identify the driver's county of residence. About 1 percent of the sample individuals had an unmatched ZIP code. Table 2 exhibits the total number of DWI offenders and the DWIs per 10,000 adult population by region during 1987-1990. Over four years, the Houston region had the most first and repeat DWI offenders (86,401 or 25 percent), followed by the Dallas/Fort Worth region (77,174 or 22 percent) and the Plains region (46,648 or 13 percent). The Corpus Christi region reported the fewest DWI offenders (14,047 or 4 percent). Repeat DWIs as a proportion of each region's total DWIs ranged from 32 percent to 41 percent, with the Plains and East Texas the highest, and the San Antonio region the lowest.

In terms of DWIs per 10,000 adult population, the overall DWI arrest rate in Texas for the period of 1987-1990 was 72.5 per 10,000 adult population. The Plains region had the highest rate both in first (54.6 per 10,000) and repeat (37.8 per 10,000) offenses, leading to the overall rate of 92.4 per 10,000. The lowest rate was observed in the Dallas/Fort Worth region (overall 62.2 per 10,000). The variation in DWI arrest rates among regions can be caused by different local factors such as DWI enforcement practices, court/adjudication procedures, prevalence rate of alcoholism, urban-rural population distribution, and permission/prohibition of alcoholic beverage sales.

The overall four-year rate of DWIs per 10,000 adult population in the current study (72.5) is almost equivalent to the rate in the previous DWIRTS report (78.6) (Fredlund 1991). However, there were some notable differences between the two studies in the San Antonio data. In the first report, the San Antonio region had the highest rate (111.3 DWIs per 10,000 adult population), but its rate declined to 76.9 per 10,000 in the subsequent report. The difference primarily came from the different rates for first offenders (78.9 per 10,000 adult population in 1985-1988 versus 52.0 per 10,000 adult population in 1987-1990).

TABLE 2: NUMBER OF DWIs BY REGION IN TEXAS, 1987-1990

Region	Number of DWI Offenses			DWIs Per 10,000 Adult Population		
	First	Repeat	Total	First	Repeat	Overall
Plains	27,556	19,092	46,648	54.6	37.8	92.4
Border	18,077	10,865	28,942	43.2	26.0	69.2
Dallas/Fort Worth	51,357	25,817	77,174	41.4	20.8	62.2
East	14,953	10,318	25,271	42.1	29.0	71.1
Houston	57,185	29,216	86,401	47.1	24.0	71.1
Central	24,216	13,676	37,892	47.0	26.5	73.5
San Antonio	21,974	10,531	32,505	52.0	24.9	76.9
Corpus Christi	8,811	5,236	14,047	47.2	28.1	75.3
Unmatched Zips	2,302	1,190	3,492	N.A.	N.A.	N.A.
Total	**226,431**	**125,941**	**352,372**	**46.6**	**25.9**	**72.5**

FIG.19 CUMULATIVE FOUR-YEAR DWI RECIDIVISM BY REGION: TEXAS FIRST OFFENDERS, 1987-1990

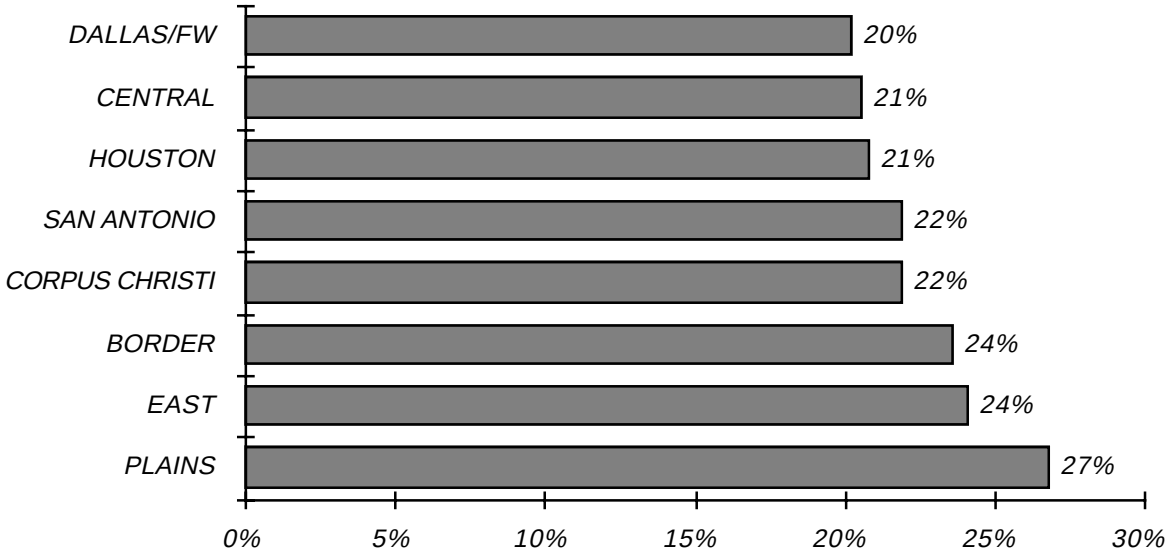
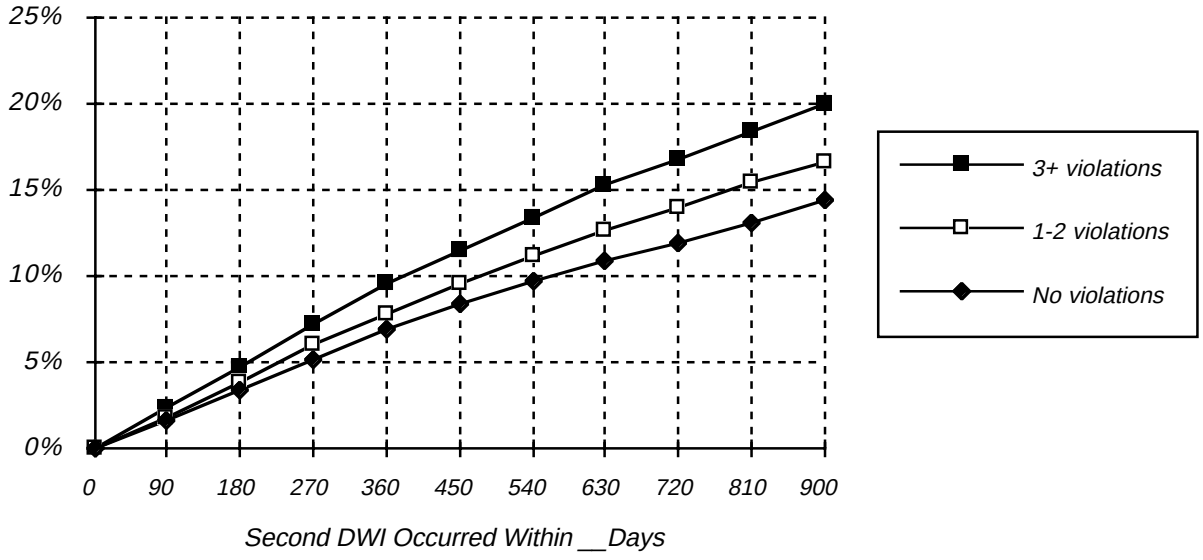


Figure 19 presents the regional cumulative recidivism rate within four years after the initial DWI offense. The percentage of first offenders rearrested for DWI varies among Texas regions and ranges from 20 percent (the Dallas/Fort Worth region) to 27 percent (the Plains region). The estimates of the recidivism rates for all regions are slightly higher in the 1987-1990 study than those in the previous 1985-1988 study. The recidivism range in the previous report was from 17 percent (the Dallas/Fort Worth region) to 23 percent (the Plains region), with a small difference in order.

FIG.20 CUMULATIVE DWI RECIDIVISM BY NUMBER OF PREVIOUS MOVING TRAFFIC VIOLATIONS: 1989 FIRST OFFENDERS IN TEXAS



4.7 Historical Factors

4.7.1 Prior Moving Violations

Non-DWI moving violations include speeding, running a red light, or any one of several hundred specific moving violations. Though moving violations are not direct indicators of DWI-related behavior, they are important since they may suggest a general tendency of disregarding established laws. DWI offenders with a prior history of moving traffic violations represent substantially higher accident risks than DWI offenders with "clean" records. The presence of pre-DWI moving violations becomes more evident as the number of DWIs increases.

Since citations for non-DWI moving violations are deleted from the driving record after five years, the recidivism analysis of previous moving violations is limited to the drivers who received their first DWI in calendar 1989. Among the 54,376 first DWI offenders, 29,949 (55 percent) had no prior moving violations, 17,665 (33 percent) had one or two prior moving violations, and 6,762 (12 percent) had three or more prior moving violations. Figure 20 shows that within 900 days (2.5 years), about 20 percent of first offenders with three or more pre-DWI moving violations were rearrested for DWI compared to 17 percent of those with one or two previous moving violations, and 14 percent of those with no prior moving violations. Individuals with higher numbers of prior non-DWI moving violations are more likely to be arrested again for DWI.

The cumulative rearrest rates by number of previous moving traffic violations are slightly higher for 1989 first offenders than those for 1987 first offenders in Texas. The previous DWIRTS study (Fredlund 1991) showed that among the 1987 first offenders with three or more pre-DWI moving violations, 17 percent were rearrested for DWI within 900 days, compared to 14 percent for offenders with one or two previous moving violations and 12 percent for drivers with no prior violations.

4.7.2 License Suspension

Alcohol-involved traffic accidents are about five times more likely to occur for drivers with suspended, revoked, or no driver's licenses than for drivers with valid licenses (DHHS 1990). The 1987-1990 driving records revealed that among Texas first DWI offenders, 41 percent (92,473 drivers) had their license suspended; 82 percent of repeat offenders had suspended licenses (licenses can be suspended for a variety of reasons related to the DWI

FIG.21 CUMULATIVE DWI RECIDIVISM BY DRIVER'S LICENSE SUSPENSION: TEXAS FIRST OFFENDERS, 1987-1990

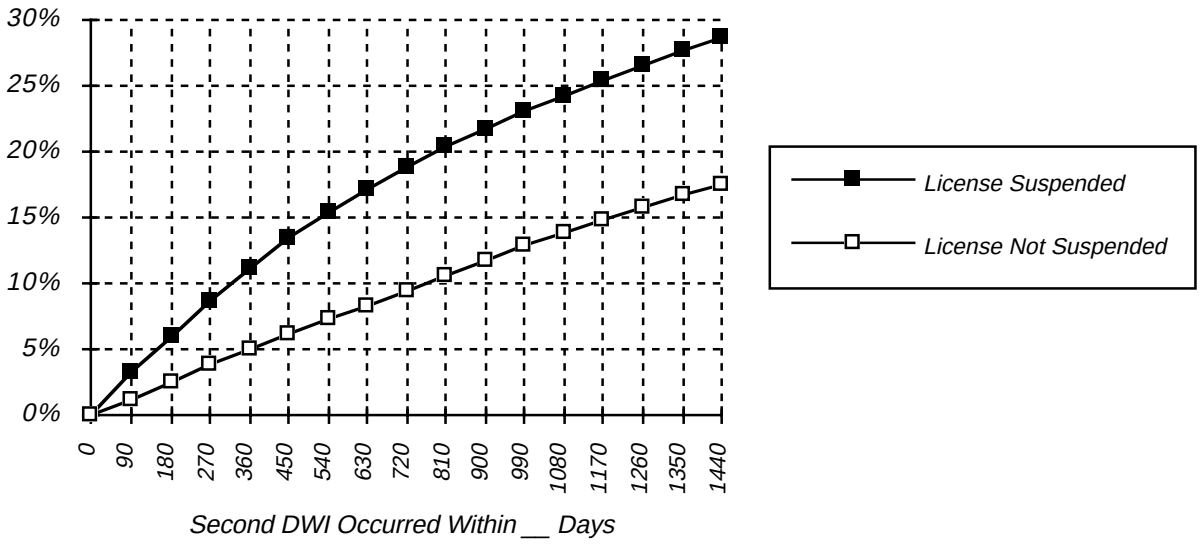
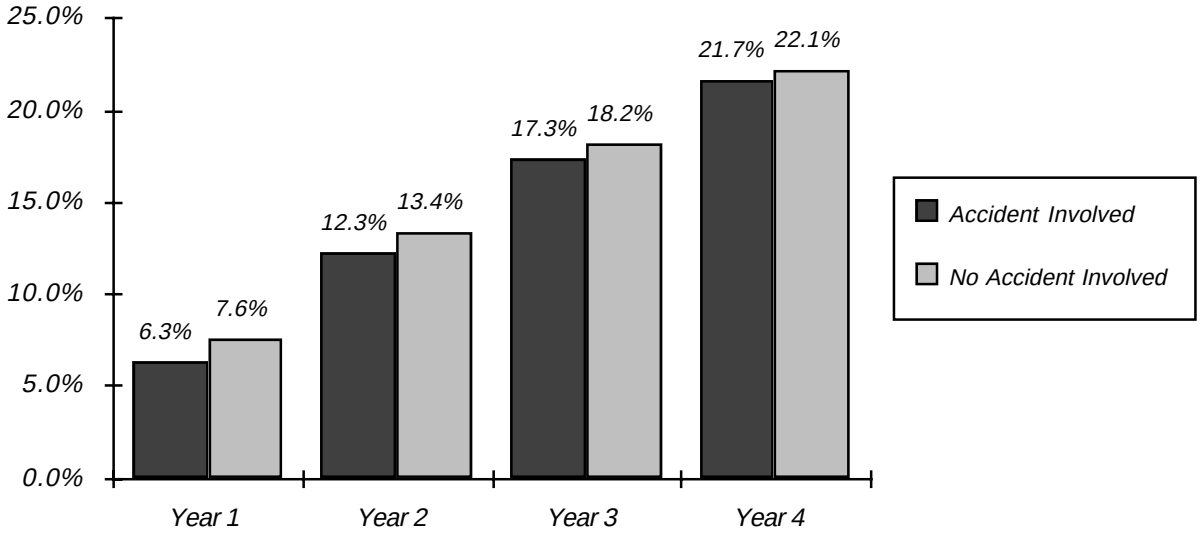


FIG.22 CUMULATIVE DWI RECIDIVISM BY ACCIDENT INVOLVEMENT, 1 TO 4 YEARS AFTER INITIAL ARREST: TEXAS FIRST OFFENDERS, 1987-1990



event). Driver's license status appears to play an important role in DWI offenses and DWI recidivism.

The recidivism rates in Figure 21 show that DWI offenders driving on a suspended license are much more likely to be rearrested than those with a valid license. Within four years of the initial DWI arrest, about 29 percent of drivers with a suspended license recidivated for second DWI, compared to 17 percent of individuals with a valid license. The significant difference in recidivism between these two groups implies that driver's license suspension or revocation penalties are ineffective in preventing DWI-convicted chronic drinkers from driving while intoxicated.

4.7.3 Accident Involvement

Figure 22 shows the DWI recidivism rates by accident involvement within four years after the first arrest. The DWI offenders who were involved in an accident were slightly less likely to be rearrested than those not in an accident (6 percent versus 8 percent at the end of year one). One feasible explanation for this result is that more accident-involved offenders may have improved their drinking-and-driving behavior after the initial DWI arrest than non-accident involved offenders. Booth and Grosswiler (1978) reported that former DWI clients who were in a car accident drank significantly less after treatment compared to non-accident involved clients. Whether or not an accident was involved at the time of the DWI arrest may have implications for future DWI recidivism risk, regardless of whether or not treatment was received.

V. CONCLUSION

DWI is a complex phenomenon and many factors affect the DWI event. In this study, DWI recidivism rates have been compared among different variables such as status of DWI Education program, blood/breath testing acceptance or refusal, geographical classification, historical driving record, and demographic characteristics. The evidence shows that probated offenders assigned to DWI Education class are less likely to be arrested again for DWI than offenders receiving direct conviction and not assigned to the education class. Moreover, probated offenders who complete the DWI Education class are about one-half as likely to recidivate as probated offenders who do not complete the class.

DWI offenders who refuse the blood/breath test have much higher recidivism rates than those taking the blood/breath test, and the blood/breath test refusers who are not convicted are more likely to recidivate than those convicted. Males are more likely than females to combine drinking and driving, and to become repeat DWI offenders. Younger drivers are more likely to recidivate than older ones. Individuals with higher numbers of prior non-DWI moving violations are more likely to be rearrested. If an accident occurred as a result of the DWI incident, the rate of DWI recidivism is slightly lower. The percentage of first offenders rearrested for second DWI varies among Texas' eight regions, with four-year cumulative recidivism rates ranging from 20 percent to 27 percent.

Within one year, multiple DWI offenders are about two times as likely to recidivate as first DWI offenders. While the number of first offenders decreased in Texas between 1987 and 1990, the number of repeat offenders increased 15 percent. Repeat offenders are more likely to refuse the blood/breath test, to drive with a suspended or revoked license, and to fail to complete the DWI Education class.

Increasing the percentage of offenders who are probated to and subsequently complete the DWI Education and Intervention programs (and, if necessary, treatment) would reduce the frequency of DWI recidivism. Because completion of an assigned education class is clearly associated with lower recidivism during the first two years after initial arrest, first offenders need to attend the DWI classes early on. Repeat DWI offenders should be assigned to the DWI Intervention program, because future reduction in DWI recidivism depends on the effective utilization of programs and countermeasures that are specifically targeted to these habitual drinking drivers. This may be particularly important for youthful offenders, since DWI careers of multiple offenders tend to start at a young age. In addition, completion of the DWI Education or DWI Intervention program should be required for offenders receiving non-probated sentences for first and subsequent offenses.

To reduce overall risk of DWI recidivism, it may also be necessary to allow an officer to take possession of a suspected DWI offender's license when the driver refuses the blood/breath test, and to revoke the license for up to one year. This provision could discourage offenders from driving when at high risk of rearrest and encourage compliance with required blood/breath testing. In addition, requiring DWI offenders to complete a DWI Education or Intervention program prior to having their licenses reinstated might help reduce recidivism.

The findings of this study are quite consistent with those from the previous 1985-88 DWI recidivism study (Fredlund 1991). There are several possible reasons that the cumulative four-year recidivism rates estimated in this study are slightly higher than those estimated in the previous 1985-88 study. First, although per capita alcohol consumption has decreased, the prevalence of heavy drinking may have remained high and thus contributed to high rates of DWI recidivism. Second, the process for expediting court records may have improved, which results in more DWI events being tracked down prior to the censor date in the study. Third, the percent of all DWI offenders who are recidivists has increased, thus contributing to the increase of overall recidivism rates.

Further study is needed on the most intractable subpopulation of habitual drinking drivers. The DWIRTS study could benefit from additional information regarding jail sentence history, substance abuse history, and fines levied due to DWIs, which could have siginificant implications for policy deci-

sions regarding the drinking driver. Also, limited evidence suggests that some indirect policies may affect the rate of alcohol consumption and subsequent impaired driving, such as taxes on alcohol and restrictions on its availability. Further evaluation of these policies is needed.

REFERENCES

Beerman, K. A., M. M. Smith, and R. L. Hall. "Predictors of Recidivism in DUIIs." *Journal of Studies on Alcohol* 49:3 (1988): 443-449.

Beitel, G. A., M. C. Sharp, and W. D. Glauz. "Probability of Arrest While Driving Under the Influence of Alcohol." *Journal of Studies on Alcohol* 36:1 (1975): 109-116.

Booth, R. E. and R. A. Grosswiler. "Correlates and Predictors of Recidivism Among Drinking Drivers." *The International Journal of the Addictions* 13:1 (1978): 79-88.

Donovan, D. M., G. A. Marlatt, and P. M. Salzberg. "Drinking Behavior, Personality Factors, and High-Risk Driving." *Journal of Studies on Alcohol* 44:3 (1983): 395-428.

Fredlund, E. V. *DWI Recidivism in Texas, 1985 Through 1988*. Austin, Texas: TCADA, May 1991.

Liu, L. Y. *Economic Costs of Alcohol and Drug Abuse in Texas: 1989*. Austin, Texas: TCADA, April 1992.

Maltz, M. *Recidivism*. Orlando, Florida: Academic Press, Inc., 1984.

Perrine, M. W. "Who Are the Drinking Drivers?" *Alcohol and Health Research World* 14 (1990): 26-35.

Randall, T. "Driving While Under Influence of Alcohol Remains Major Cause of Traffic Violence." *JAMA* 268:3 (July 15, 1992): 303-304.

Richman, A. "Human Risk Factors in Alcohol-Related Crashes." *Journal of Studies on Alcohol*, Supplement No. 10 (July 1985): 21-31.

Texas Commission on Alcohol and Drug Abuse. TCADA Adult Survey, conducted in conjunction with Texas A&M Public Policy Resources Laboratory (PPRL), Spring 1988; unpublished data.

_____. *1990 Texas School Survey of Substance Abuse*. Austin, Texas: TCADA, October 1990.

_____. *Current Substance Abuse Trends in Texas*. Austin, Texas: TCADA, May 1992.

U.S. Department of Health and Human Services. *Alcohol and Health: Seventh Special Report to the U.S. Congress*. Rockville, MD: DHHS, January 1990.

Yu, J., D. T. Essex, and W. R. Williford. "DWI/DWAI Offenders and Recidivism by Gender in the Eighties: A Changing Trend?" *The International Journal of the Addictions* 27:6 (1992): 637-647

Zodor, P. L. "Alcohol-Related Risk of Fatal Driver Injuries in Relation to Driver Age and Sex." *Insurance Institute of Highway Safety* (1989).

Appendix A: BAC Chart

Not Available in electronic form. Contact the Commission for a copy of this chart.

Appendix B: Texas County Information and Regional Listing

Region 1, Plains
Andrews
Archer
Armstrong
Bailey
Baylor
Borden
Briscoe
Brown
Callahan
Carson
Castro
Childress
Clay
Cochran
Coke
Coleman
Collingsworth
Comanche
Concho
Cottle
Crane
Crockett
Crosby
Dallam
Deaf Smith
Dickens
Donely
Eastland
Ector
Fisher
Floyd
Foard
Gaines
Garza
Flasscock
Gray
Hale
Hall
Hansford
Hardeman
Hartley
Haskell
Hemphill
Hockley
Howard
Hutchinson
Irion
Jack
Jones
Kent
Kimble
King
Knox
Lamb
Lipscomb
Loving
Lubbock
Lynn
McCullough
Martin
Mason
Menard
Midland
Mitchell
Montague
Moore
Motley
Nolan
Ochiltree
Oldham
Parmer
Pecos
Potter
Randall
Reagan
Reeves
Roberts
Runnels
Schleicher
Scurry
Schackelford
Sherman
Stephens
Sterling
Stonewall
Sutton
Swisher
Taylor
Terrell
Terry
Throckmorton
Tom Green
Upton
Ward Wheeler
Wichita
Wilbarger
Winkler
Yoakum
Young

Region2, Border
Brewster
Cameron
Culberson
Dimmit
Edwards
El Paso
Hidalgo
Hudspeth
Jeff Davis
Jim Hogg
Kinney
La Salle
Maverick
Presidio
Real Starr
Uvalde
Val Verde
Webb
Willacy
Zapata
Zavala

Region 3, Dallas/Ft Worth
Collin
Cooke
Dallas
Denton
Ellis
Erath
Fannin
Grayson
Hood
Hunt
Johnson
Kaufman
Navarro
Palo Pinto
Parker
Rockwall
Somervell
Tarrant
Wise

Region 4, East
Anderson
Angelina
Bowie
Camp
Cass
Cherokee
Delta
Franklin
Gregg
Harrison
Henderson
Hopkins
Houston
Jasper
Lamar
Marion
Morris
Nacogdoches
Sabine
San Augustine
San Jacinto
Shelby
Smith
Titus
Trinity
Tyler
Upshur
Van Zandt
Wood
Newton
Panola
Polk
Rains
Red River
Rusk

Region 5, Houston
Austin
Brazoria
Chambers
Colorado
Fort Bend
Galveston
Hardin
Harris
Jefferson
Liberty
Matagorda
Montgomery
Orange
Walker
Waller
Wharton

Region 6, Central
Bastrop
Bell
Blanco
Bosque
Brazos
Burleson
Burnet
Caldwell
Coryell
Falls
Fayette
Freestone
Grimes
Hamilton
Hays
Hill
Lampasas
Lee
Leon
Limestone
Llano
McLennan
Madison
Milam
Mills
Robertson
San Saba
Travis
Washington
Williamson

Region 7, San Antonio
Atascosa
Bandera
Bexar
Comal
Frio
Gillespie
Guadalupe
Karnes
Kendall
Kerr
Medina
Wilson

Region 8, Corpus Christi
Aransas
Bee
Brooks
Calhoun
DeWitt
Duval
Goliad
Gonzales
Jackson
Jim Wells
Kenedy
Kleberg
Lavaca
Live Oak
McMullen
Nueces
Refugio
San Patricio
Victoria

TABLE B1: ADULT POPULATION BY REGION AND AGE GROUP IN TEXAS, 1990

Region	*Total Adults*	*Aged 18-24*	*Aged 25-34*	*Aged 35+*
Plains	*1,262,401*	*185,380*	*282,725*	*794,296*
Border	*1,045,619*	*189,457*	*249,305*	*606,857*
Dallas/Fort Worth		*3,104,482*	*462,255*	*871,169*
1,771,058				
East	*888,369*	*117,516*	*178,009*	*592,844*
Houston	*3,037,753*	*446,072*	*820,887*	*1,770,794*
Central	*1,288,570*	*262,432*	*322,016*	*704,122*
San Antonio	*1,057,024*	*162,891*	*255,510*	*638,623*
Corpus Christi		*466,453*	*64,841*	*106,550*
295,062				
Total	***12,150,671***	***1,890,844***	***3,086,171***	***7,173,656***

Source: Texas 1990 Census of Population, U.S. Department of Commerce, Bureau of the Census.